

# Introduction to Broadband For Public Safety

***Presentation to  
Public Safety Communications Advisory  
Commission***

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- What Broadband Enables
- Functional Capabilities
- Radio Spectrum & Allocations
- History
- Arizona & Broadband
- Questions / Discussion

### Broadband Enables:

- Email, Internet, etc. (generic Broadband today)
- Bulk data transfer – video, records, diagrams
- Access to databases – MVD, Photo ID, criminal history

### Currently, Broadband Doesn't Enable:

- Public Safety level voice (signal loss, distance)
- No remote to remote direct capability



# Broadband Functional Capabilities

- Field Access to Computer Aided Dispatch and Records Management Systems (CAD/RMS)
- Incident Video
- Broadband Data Dispatch
- Download of Building Schematics
- Mobile Access to Geographic Information System (GIS)
- Aerial Video / Robotic Video (cave-in, haz-mat scene, fire)
- Telemetry for responder location and biometric information
- Automatic Vehicle Location (AVL)
- Real time mapping for field supervision ...
- Making Incident Response safer, more efficient and more effective

- <http://www.iwceexpo.com/iwce2010/CUSTOM/700MHz%20Whitepaper%20on%20Spectrum%20Feb%202010%20FINAL.pdf>



# Broadband Related - 108 MHz

## UNITED STATES FREQUENCY ALLOCATIONS THE RADIO SPECTRUM

RADIO SERVICES COLOR LEGEND

AERONAUTICAL MOBILE	WATER SATELLITE	FIXED AERONAUTICAL
AERONAUTICAL MOBILE SATELLITE	LAND MOBILE	RADIO DETERMINATION SATELLITE
AERONAUTICAL RADIO NAVIGATION	LAND MOBILE SATELLITE	RADIO LOCATION
AMATEUR	MARITIME MOBILE	RADIO LOCATION SATELLITE
AMATEUR SATELLITE	MARITIME MOBILE SATELLITE	RADIO NAVIGATION
BROADCASTING	MARITIME RADIO NAVIGATION	RADIO NAVIGATION SATELLITE
BROADCASTING SATELLITE	METEOROLOGICAL AND	SPACE OPERATION
EARTH EXPLORATION SATELLITE	METEOROLOGICAL SATELLITE	SPACE RESEARCH
FIXED	MOBILE	STANDARD FREQUENCY AND TIME SIGNAL
FIXED SATELLITE	MOBILE SATELLITE	STANDARD FREQUENCY AND TIME SIGNAL SATELLITE

ACTIVITY CODE

GOVERNMENT EXCLUSIVE	GOVERNMENT/NON-GOVERNMENT SHARED
NON-GOVERNMENT EXCLUSIVE	

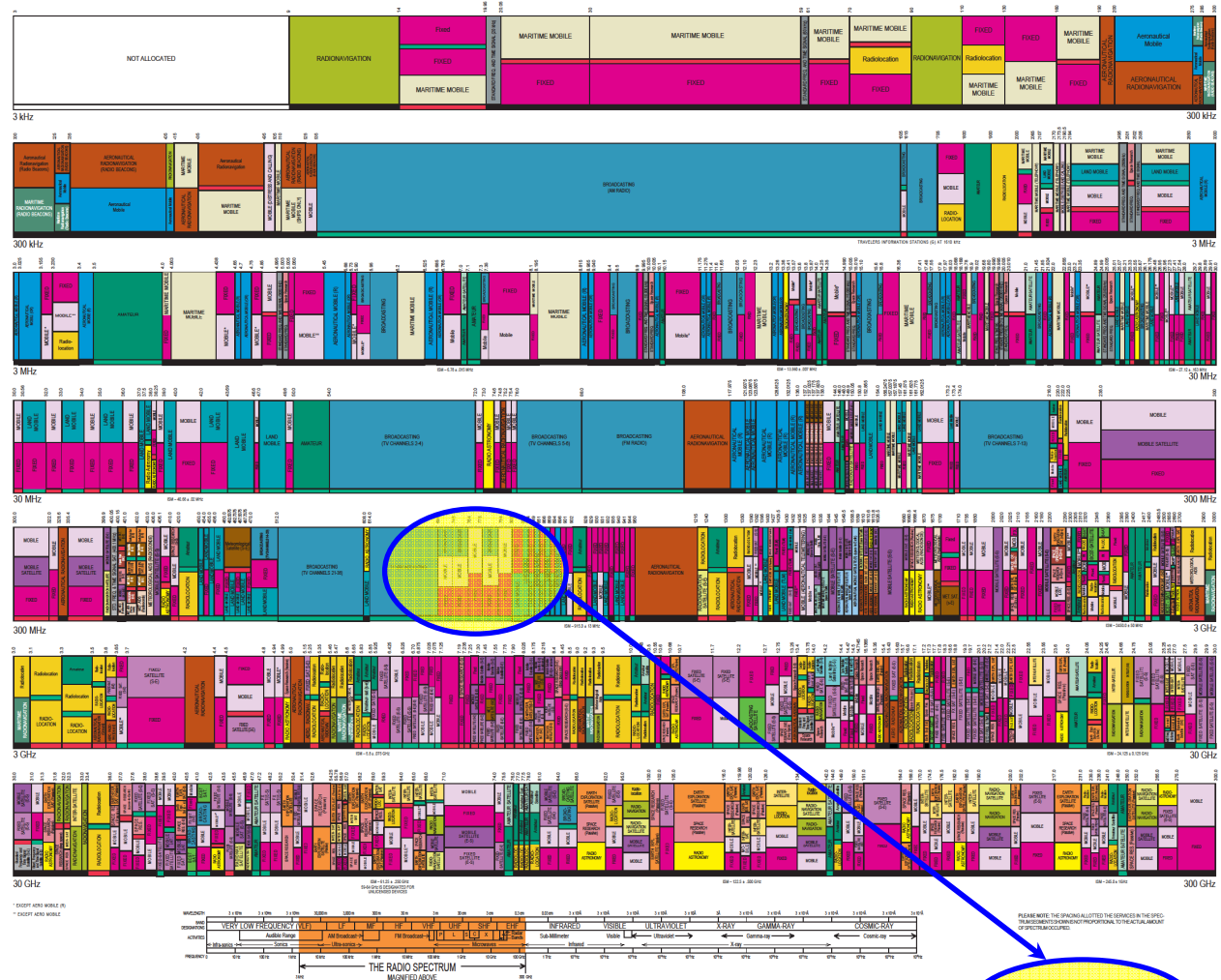
ALLOCATION USAGE DESIGNATION

SERVICE	EXAMPLE	DESIGNATION
Primary	FIXED	Capital Letters
Secondary	Mobile	1st Capital with lower case letters

This chart is a graphic representation of the Table of Frequency Allocations used by the FCC and ITU. All data is taken as currently published at present. In addition, some minor changes have been made to the Table of Frequency Allocations. However, no complete revision, which would reflect the changes in the Table of Frequency Allocations, has been made.



October 2003

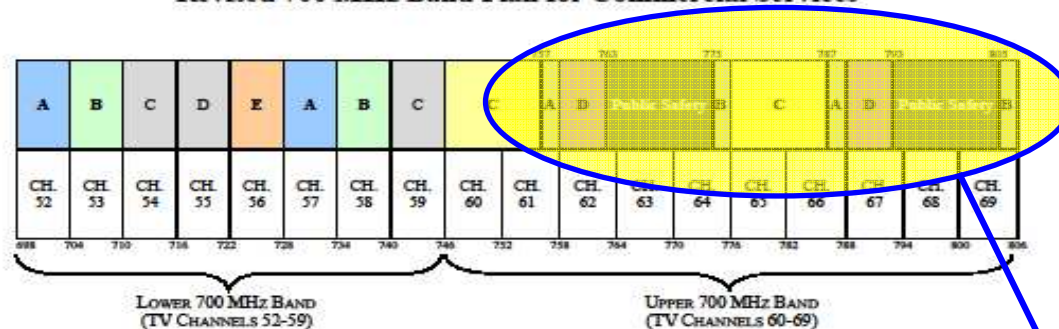


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# Public Safety - 24 of the 108 MHz

Revised 700 MHz Band Plan for Commercial Services



Block	Frequencies (MHz)	Bandwidth	Pairing	Area Type	Licenses
A	698-704, 728-734	12 MHz	2 x 6 MHz	EA	176
B	704-710, 734-740	12 MHz	2 x 6 MHz	CMA	734
C	710-716, 740-746	12 MHz	2 x 6 MHz	CMA	734
D	716-722	6 MHz	unpaired	EAG	6
E	722-728	6 MHz	unpaired	EA	176
C	746-757, 776-787	22 MHz	2 x 11 MHz	REAG	12
A	757-758, 787-788	2 MHz	2 x 1 MHz	MEA	52
D	758-763, 788-793	10 MHz	2 x 5 MHz	Nationwide	1 *
B	775-776, 805-806	2 MHz	2 x 1 MHz	MEA	52

\* Subject to conditions respecting a public/private partnership.

The blocks shaded above in gray (Lower 700 MHz Band C and D Blocks and Upper 700 MHz Band A and B Blocks) were auctioned prior to Auction 73.

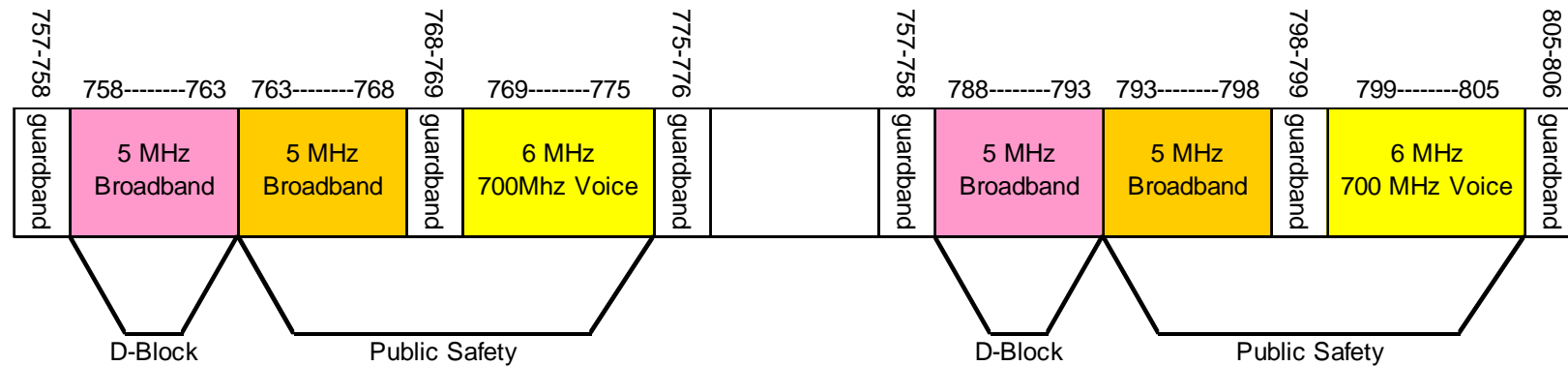
Last reviewed/updated 9/5/2007.

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<http://wireless.fcc.gov/auctions/data/bandplans/700MHzBandPlan.pdf>



## 24 MHz - Voice and Broadband



- Public Safety portion
  - Split into Voice and Broadband
  - Split into Receive and Transmit
  - Voice is broken into 930 separate 6.5 kHz chunks
- D – Block

- Bid for TV spectrum - 2008
  - C-Block – AT&T and Verizon
  - D-Block – Bids did not meet the reserve price and it was taken off the market
- The Spectrum for Public Safety Broadband is becoming available
- Waiver Requests - 21 Granted so far (including Mesa), 23 additional requests are pending (including Tucson)
- More spectrum may become available
  - Currently, FCC and the Administration are in favor of auctioning the D-Block to the private sector with Public Safety priority usage
  - Public Safety, State and Local Government are in favor of allocating the D-Block solely to Public Safety



- Mesa – TOPAZ
  - Arizona has 1 of first 21 waiver recipients working to utilize the 700 MHz Public Safety Broadband range
  - Work with the Public Safety Communications Research Program (PSCR) and the Emergency Response Interoperability Center (ERIC) is beginning.
  - A presentation regarding their plans will be made at the November 16<sup>th</sup> PSCC meeting.



## Arizona & Broadband Funding

- SACCCNet/GovNet - Broadband BTOP grant
  - Build out of 316 microwave facilities and the downlinks funded.
  - Fixed location broadband much like cable access. Great for schools, libraries, etc.
  - No remote capability currently foreseen.



## Observations & Guidance

- We need to address how Broadband impacts Interoperability
- We need to incorporate Broadband into the next Annual Update of the Statewide Communications Interoperability Plan (SCIP)
- How do we work with Public Safety Communications Research Program (PSCR), the Emergency Response Interoperability Center (ERIC) and the AZ waiver recipients?
- Do we submit a nomination for ERIC due Oct 1? (see Handout)

# Questions Discussion

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